THUMB CMC JOINT ARTHROPLASTY

Using *DePuy Synthes Mitek Sports Medicine MINILOK™* Absorbable Anchors

Michael R. Redler, MD
The OSM Center
Trumbull, CT
SURGICAL TECHNIQUE

OVERVIEW

Degenerative joint disease of the basal joint of the thumb, the CMC (carpal metacarpal) joint, is perhaps one of the most common joints in the hand and wrist to become arthritic. The surgical technique involving trapeziectomy and use of a tendon interposition graft has been used successfully for many years to treat this condition.

The traditional technique involves creation of bone tunnels in the proximal portion of the thumb metacarpal as well as tight capsular closure to ensure predictability of graft position. With variability in bone quality the creation of bone tunnels in the proximal portion of the metacarpal can be both challenging as well as time-consuming. Because of potential problems with capsular closure, graft subluxation has also been reported.

Clinical Summary

The surgical technique described here utilizes DePuy Synthes Mitek Sports Medicine MINILOK™ Absorbable Anchors to avoid the need to create bone tunnels. The technique may decrease incidence of graft subluxation by anchoring the graft within the CMC joint.

Predictability in results and decreased surgical time have been apparent over the years since this procedure has been employed.
1
The hand and forearm are prepped in the usual fashion. Surgery is done under tourniquet control. A curvilinear incision is made over the thumb CMC joint. Dissection is done in a blunt fashion to identify and preserve branches of the superficial radial nerve. Incision is carried down to the capsule, which is divided in a sharp fashion. Associated synovitis is often encountered and synovectomy is usually performed.

2
Confirmation of the CMC joint may be done under mini C-arm control. Soft tissue about the area of the trapezium is elevated in a sharp fashion. The trapezioscaphoid joint should also be identified, and the capsule here sharply divided.

The trapezium may be split using an oscillating saw to help with removal. The trapezium is then removed in a piecemeal-type fashion using a rongeur.

3
It is helpful to have C-arm confirmation that all trapezial fragments have been removed. Care is taken to identify the flexor carpi radialis deep within the CMC joint. Its integrity should be maintained to help with the grafting portion of the procedure.
A transverse incision is made over the area of the myotendinous junction of flexor carpi radialis. Flexor carpi radialis is divided at its myotendinous junction and a 0 suture placed in the end of the tendon.

A tendon stripper is used to free soft tissue adhesions up to the area of the wrist crease. Flexor carpi radialis can then usually be delivered into the CMC joint with the use of an Allis-type clamp.
Two DePuy Synthes Mitek Sports Medicine MINILOK Absorbable Anchors are placed, one in the base of the thumb metacarpal, one into the trapezoid. These are both done through pilot holes. Decortication of the articular surface of the proximal portion of the thumb metacarpal is not necessary and cortical bone here is useful in maintaining anchor position.

Optionally, a 0.45 K-wire can be placed to the base of the thumb metacarpal, going across to the base of the second metacarpal to hold the CMC joint in a distracted, anatomic, and functional position.
The remaining portion of flexor carpi radialis is then fashioned into an anchovy type configuration, and the sutures from the trapezoid are then passed through the flexor carpi radialis in a purse string-type fashion. This will allow the graft to stay securely in place and to minimize potential graft subluxation.
10
Standard capsular closure is then done. If the pin is used, then this is brought through a separate stab wound and bent over and a pin cap placed. Skin incisions are closed in the usual fashion after good hemostasis is confirmed.

11
A dry sterile dressing is applied and either a thumb spica-type splint or cast is placed. Ensure the IP joint is allowed to have normal range of motion.
Limited Warranty and Disclaimer: DePuy Mitek, Inc. products are sold with a limited warranty to the original purchaser against defects in workmanship and materials. Any other express or implied warranties, including warranties of merchantability or fitness, are hereby disclaimed.

WARNING: In the USA, this product has labeling limitations. See package insert for complete information.

CAUTION: USA Law restricts these devices to sale by or on the order of a physician.


Not all products are currently available in all markets.

DePuy Mitek, Inc.
325 Paramount Drive
Raynham, MA 02767-0350
USA

Distributed in the USA by:
DePuy Mitek, Inc.
325 Paramount Drive
Raynham, MA 02767
USA
Tel: +1 (800) 382-4682

Johnson & Johnson Medical Limited
Pinewood Campus
Nine Mile Ride
Wokingham
RG40 3EW
Berkshire
United Kingdom

Authorized European Representative:
DePuy International, Ltd.
St Anthony’s Road
Leeds
LS11 8DT
West Yorkshire
United Kingdom
Tel: +44 (0) 113 387 7800
Fax: +44 (0) 113 387 7890